Occupational HAZARDS

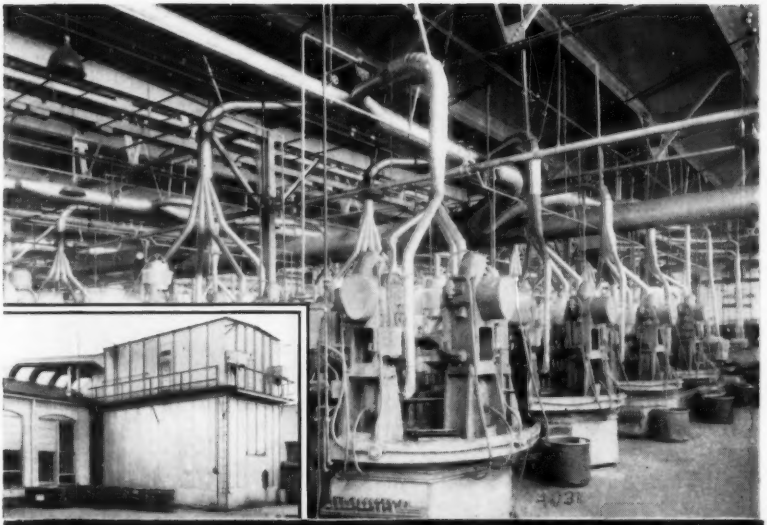
JULY 1940

Articles of Economic Interest to Management

- Vacuum Cleaning Reduces Costs
- The Johns-Manville Plan
- Occupational Skin Disease Control
- The Effect of Noise on Workers
- Proven Money Savers from Widespread Sources

The only management publication devoted exclusively to the engineering control of:

Dusts • Fumes • Vapors • Gases • Organic Solvents
Dermatitis • Industrial Sanitation
Industrial Health & Safety



KIRK & BLUM DUST CONTROL SYSTEM

SAVES MEN MONEY MACHINERY

IN THIS large automotive parts plant, machine tools are connected to a Double File Dust Filter through piping installed by Kirk & Blum. Plant manager says, "We have the best cast iron dust collecting system I have seen anywhere."

Kirk & Blum Engineers will survey your plant and recommend a dust collecting system which will keep your plant clean, protect the health of your employees, prevent excessive wear on your machinery.

Send for book "Dust Collecting Systems in Metal Industries." It shows pictures of successful installations, gives details on how Dust Collecting Problems have been conquered. Write for facts regarding our service—no obligation to you.

THE KIRK & BLUM MFG. CO. 2816 Spring Grove Ave., Cincinnati, Ohio

Chicago Representative: C. P. Guion, 1661 N. Milwaukee; Pittsburgh: Bushnell Mchy. Co., 311 Ross St.; Louisville: Liberty Eng. & Mfg. Co., Inc., 1450 S. 15th St.

Check HEAT-FAG
before it Checks PRODUCTION!

DON'T let this unseen force slow up your workers and sap their energy. Body salt lost through sweat must be replaced, or efficiency is lowered. The small cost of providing salt tablets brings big returns in better production and more contented workers. *Write for folder: "Heat Fag Among Workers."*

MORTON'S SALT TABLETS

Morton's Modern Sanitary Dispenser
Delivers tablets one at a time. Morton's Salt Tablets are made of the most highly refined salt, pressed into convenient tablet form. Easy to take with a drink of water — dissolves in less than 50 seconds after swallowing.

DISPENSER 500 Tablet Size...$3.25
1000 Tablet Size.....$4.00
Case of 9000 10-grain salt tablets $2.60

MORTON SALT COMPANY CHICAGO, ILLINOIS

Safeguarding Painters' Health

A new, but fast growing, process is being used in maintaining the appearance of the Golden Gate Bridge in San Francisco Bay. Before the application of paint, an oxy-acetylene flame is swept over small areas of the surface to be cleaned. The expansion effect of the intense heat and the blast of the flame are sufficient to loosen and remove all scale. A primer and two coats of paint follow this operation.

The principal hazard of employment for painters on this project, according to the contractor's experience, had been lead poisoning. This ailment is contracted by inhalation of lead particles, or by absorption through contamination of food by dirty hands. To prevent inhalation of lead, the painters are provided with gauze masks. In confined places such as the interior of chords, the masks are changed three or four times a day. To prevent absorption by mouth, the men are instructed to hold their sandwiches by the waxpaper wrapping.

In addition, a periodical blood count and check-up by a physician is made on each man. The length of the period varies according to the susceptibility of the man to lead absorption. Whenever an employee shows signs of lead absorption he is given preventive medication. This treatment, which is given by mouth, has been very effective. Since the periodical examinations have been put into effect there has been only one case of lead poisoning and it was established that this man was extremely susceptible to the ailment.

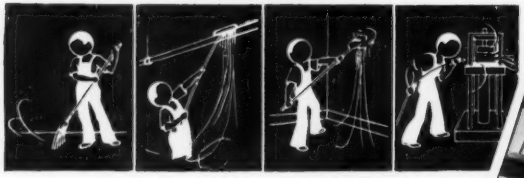
Older employees can be taught

IN THOSE plants where employees have been on the job for a good many years, the introduction of health and safety programs are usually met with disinterest. A man who has formed the habit of a method of an operation is sometimes reluctant to change. Some firms get around this problem by a tactful approach.

Mr. P. W. Hussey, President, The Hussey Mfg. Company, New Berwick, Maine, tells of the method his firm employed in getting the men to wear safety shoes. "The advantages of safety shoes were carefully explained to our men in a simple offhand manner—with not even a suggestion of any kind that it was the desire of the management that the men put on steel toes, as we now call them. A notice was placed on the bulletin board that steel toes could be had by applying to the office or foremen. No results.

"Then, as chance would have it, another lost time accident—and a lost toe. We decided then that immediate steps must be taken to relieve this situation. A representative of a shoe

(Continued on page 4)



THE OLD WAY THE NEW WAY →

Write for this new book on **INDUSTRIAL CLEANING**

See how others clean large areas at low cost and save in production and maintenance because Spencer does the jobs that cannot be done by other methods.

The complete line of Spencer Portable and Central Systems and Vacuum Tools is described in this book. Yours on request.

S-193-A

SPENCER
HARTFORD

CENTRAL AND PORTABLE
VACUUM CLEANING SYSTEMS

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

The publications briefly described in this service department are prepared by manufacturers' technical experts. The data they contain on equipment supplies and prevention methods applies to varied phases of occupational hazard problems. Note those items desired on coupon below and send to Occupational Hazards, 812 Huron Rd., Cleveland, Ohio. See pages 30 and 31 for New Products.

308—AVOID SKIN IRRITATION
Descriptive data outlining a method for reducing skin infections is contained in a booklet prepared by The Dupont Company. See page 5.

309—DUST COLLECTION DATA
A series of six educational folders regarding the economies of controlling the dust nuisance is being released by the Pangborn Corporation, Hagerstown, Maryland. A "who's who" of users in specific industries is offered.

310—DRINKING FOUNTAINS
A well illustrated bulletin points out the attractive drinking fountain fixtures put out by Temprite Products Corporation. The Temprite method for temperature control of water is clearly defined.

311—VACUUM CLEANING
"Remove the Menace of Dust" is the title of a booklet released by the U. S. Hoffman Machinery Corporation. Valuable "how to do it" data should prove of interest to production executives. See p. 6.

312—FOUNDRY EQUIPMENT CATALOG
American Foundry Equipment Company, Mishawaka, Indiana, has just published a new 12-page reference catalog of the entire line of products manufactured by them. The catalog presents a complete summary, liberally illustrated, of the models and sizes of their Dust Collectors and other foundry equipment.

313—INDUSTRIAL SANITATION
Valuable advise on solving industrial sanitation problems is contained in a booklet issued by the Crane Co. See inside back cover.

314—DUST CONTROL
The W. W. Sly Mfg. Co. has issued its new booklet on dust control. The booklet contains information on the practical approach to the solution of dust problems and the value of complete dust collection. It is profusely illustrated with photographs, engineering sketches and diagrams. Installations for different industries are described and actual accomplishments in dust control are pointed out.

315—HEAT FAG PREVENTION
International Salt Company has released a folder that provides practical solutions to the heat prostration problem in industry. See page 27.

316—SMALL WATER COOLER
A recent feature in the line of equipment manufactured by the Puro Filter Corp., New York is a small capacity water cooler. A folder discusses its application to industry.

317—SKIN CLEANSER
A pamphlet describing the cleansing efficiency and skin protection offered by their cleanser, is a recent release from the Packwood Manufacturing Company. See page 20.

318—FANS & BLOWERS
The Hartzell Propeller Fan Company makes available a 32-page illustrated catalog that contains air delivery tables and describes fans for use where excessive abrasive or corrosive elements are present.

FREE LITERATURE COUPON Clip out and paste on postcard or enclose in envelope.
Mail to: OCCUPATIONAL HAZARDS, 812 Huron Road, Cleveland, Ohio.

Nos. of desired items .....

Firm Name .....

Your Name ..... Position .....

Street and Number of Your Firm .....

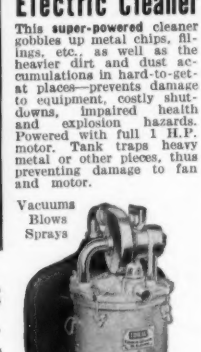
City ..... State .....
FL-22

DIRT ATTACKS DEFEATED!!!

with IDEAL "3-in-1" "TANK-TYPE" Electric Cleaner

This **super-powered** cleaner gobbles up metal chips, filings, etc., as well as the heavier dirt and dust accumulations in hard-to-get-at places—prevents damage to equipment, costly shutdowns, impaired health and explosion hazards. Powered with full 1 H.P. motor. Tank traps heavy metal or other pieces, thus preventing damage to fan and motor.

Vacuums
Blows
Sprays



WRITE for FACTS

. . . IDEAL "3-in-1" Electric Cleaners include 7 models, and attachments to meet every requirement.

Ask for Free Trial Demonstration

IDEAL CUMMUTATOR DRESSER CO.

5072 Park Avenue **Sycamore, Illinois**

manufacturer was called in—the plant shut down while he told the men the story. Even then the men were not sold on steel toes—they wanted to be shown. One shoe was held on an anvil, then the biggest man was given a five pound hammer and told to do his best. After both shoes had stood up better than was expected it was clearly evident that steel toes would be the vogue, especially so after the management offered to pay the extra cost of such shoes over the average price of the type of shoes formerly worn.

New Industrial Oven Book

A new twenty-four page book, illustrating and describing gas-fired and electric industrial ovens, has just

been issued by The Kirk & Blum Manufacturing Company, Cincinnati, Ohio, nationally-known designers, fabricators and installation contractors for sheet metal equipment. It contains important and valuable information for executives interested in faster and more economical drying, baking and enameling operations.

Believe It or Not

An employee of an automobile plant recently narrowly escaped losing the sight of both eyes, all because of a drop of water. This worker, a die maker, was holding a bottle of blue vitriol used in his work. As he was bending over the bottle a drop of water leaking through a skylight fell on the back of his neck. The man inadvertently flinched, and in so doing threw the acid into his eye and face.

He rushed to the water fountain and sprayed his eyes. At the plant hospital he received treatment, and in a few hours was none the worse.

Safety engineers are continually striving to eliminate all accident possibilities, but little would they think that a mere drop of water could come so near to causing a serious mishap?

Some Hints on Clothing

Wear only the kind that will give you adequate protection in your work and have it fit you comfortably and snugly—no loose ends.

1. If you work around machinery, wear snug clothes; keep your sleeves buttoned around the wrist or cut short; avoid finger rings and flowing neck ties. If you wear overalls, keep the jumper inside. Don't wear gloves. Keep a pair of goggles handy and use them when necessary.

2. If you work in acids and caustic wear broad brimmed felt hat to protect your face, neck and ears from drips, suitable goggles to protect your eyes, woolen shirts and trousers, rubber gloves with gauntlet tucked inside your sleeves, rubber boots with your trouser legs outside, and keep your collar buttoned to your neck.

3. If your work requires you to handle heavy objects, safety shoes will protect your toes.

4. Keep the soles of your shoes in good enough condition to protect you from nails, splinters and the like.

5. Remember that wool affords better protection from acids and caustics, hot metal and flame, than cotton.

6. If you are required to handle objects needing glove protection, remember that your hands will slip out of mittens more readily than gloves in a tight place.

If your job requires special protective clothing, wear it conscientiously for your own safety.

Safe Welding Practices

The International Acetylene Association, 30 East 42nd St., New York, N.Y., announce the release of a revised publication entitled, "Safe Practices for Installation and Operation of Oxy-Acetylene Welding and Cutting Equipment." Considerable space is devoted to eye protection, safe clothing, fire prevention, accident prevention and industrial health. Information is also given on the proper storage of calcium carbide and gases.

AVOID SKIN IRRITATION

1 RUB ON PRO-TEK LIKE A COLD CREAM
2 LET IT PROTECT YOU WHILE YOU WORK
3 THEN WASH IT OFF—THE GRIME GOES WITH IT
DU PONT
PRO-TEK
THE INVISIBLE GLOVE

PRO-TEK is a greaseless cream which helps to protect the skin from physical contact with materials which may stain or cause irritation. Send for free booklet. E. I. du Pont de Nemours & Co. (Inc.), Dept. O-4, Wilmington, Delaware.

DU PONT
PRO-TEK
REG. U. S. PAT. OFF.
THE INVISIBLE GLOVE

New President for du Pont

Pierre S. du Pont retired as chairman of the board and Lammont du Pont resigned as president of E. I. du Pont de Nemours & Company at a meeting of the board of directors today. Lammont du Pont was elected chairman of the board. Walter S. Carpenter, Jr., was made president.

Get ALL 4 BENEFITS with

HOFFMAN

VACUUM CLEANING EQUIPMENT

1 *Save* ON CLEANING COSTS

The most economical way to get *all* the dirt. Vacuum cleaning collects 66% more dirt in same time.

2 *Reduce* PLANT MAINTENANCE

Prevents discoloration and corrosion of painted surfaces and steel work. Brightens walls – postpones repainting.

3 *Prevent* DAMAGE TO PRODUCT

Dust particles filtering down from overhead frequently cause costly damage to products in process of manufacture.

4 *Protect* WORKERS' HEALTH

Protect health of workers. Breathing dust-laden air is a serious health hazard. Hoffman equipment provides safe working conditions.

WRITE FOR NEW BOOKLET "REMOVE THE MENACE OF DUST"

U. S. HOFFMAN

MACHINERY CORPORATION

Air Appliance Division

100 East 12th St., New York, N.Y.

Chemical Risks

The handling of many chemicals involves the risk of explosion, which may result in injuries just as serious as a dynamite explosion.

Persons employed in handling dangerous chemicals should be fully instructed as to the dangers involved, and the antidotes necessary for corrosive or poisonous materials.

Where necessary, eye protectors, respirators and gloves, and boots of resistant material should be provided for the workers and their constant use insisted upon. As rubber is acid resisting, gloves and boots of this material are extensively used in the chemical industry. Unfortunately, when the floors are wet, rubber boots are liable to cause the wearer to slip, and a good practice is to have the soles specially moulded with a heavy non-slip tread.

Some of the most common risks from chemicals are as follows:

1. Fire risk, due to inflammable substances, or the fumes given off by them.

2. Explosion, either of the substance itself, or fine powered dust which is sometimes given off during the process of manufacture.

3. Burns from acids, or corrosive alkali.

4. Poison, either through skin contact, or by inhalation.

Check Ventilation

With the hot season at hand it will pay every plant to take steps to improve employee comfort and efficiency through some means of ventilation. Have competent authorities study your plant set-up—physical construction, operations, materials, etc.,—and install that equipment which will accomplish this profitable purpose.

Occupational HAZARDS

JULY 1940

Volume 2 Number 10

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Irving B. Hexter, President — L. P. Aurbach, Vice-President
Jack Weiss, Associate Editor — William S. Papworth, Associate Editor

Using Vacuum Cleaning Equ

by J. E. TURNER
General Steel Castings Co.
Eddystone, Penna.

- *Reduce Health Hazar*
- *Reduce Mainte* *e Ex*
- *Reduc* *oduc*
- *duce*

NOT a great many years ago in the average run of industrial plants, particularly in the foundry industry and other industries having dust conditions from manufacturing operations, very little attention was paid to keeping a plant clean. This was especially true in removing wall and overhead dust accumulations and preventing such accumulations. In recent years a remarkable change has come about in plants having reoccuring dust conditions.

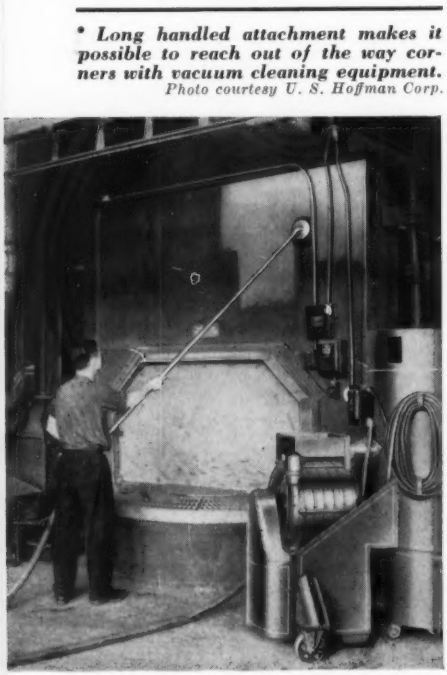
The dust may be (1) of a health hazard nature, (2) it may be an explosive hazard, (3) it may damage products, (4) it always increases maintenance expense, (5) it destroys painted surfaces, (6) and it usually affects the working efficiency of the employees.

Where there is a continual dust condition, consideration should first be given to the installation of dust collecting systems to control or collect as much of the dust at the point of origin as possible. Such systems are very effective but it is seldom possible to collect all of the dust at the source and therefore it is necessary to do a certain amount of cleaning daily in order to have an efficient plant.

In previous years vacuum cleaning equipment as applied to an industrial plant was looked upon as a luxury item. Today it is definitely recognized as the accepted and practical method of maintaining a clean plant, taking care of a dust nuisance, and as a result, an economy measure.

Dusts that may create a health hazard or be an explosive hazard should be eliminated for the benefit of plant conditions, for the benefit of

• ***Long handled attachment makes it possible to reach out of the way corners with vacuum cleaning equipment.***
Photo courtesy U. S. Hoffman Corp.



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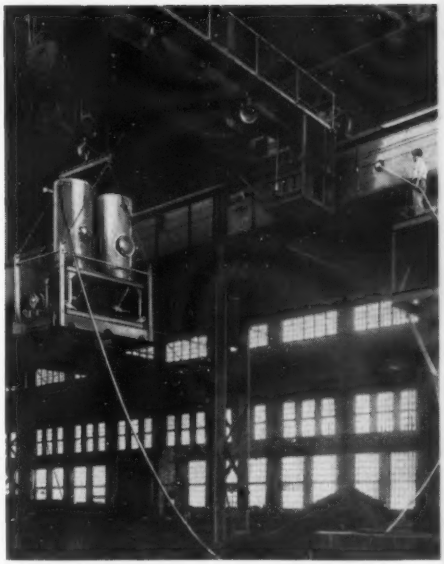
• *...duce Explosion Hazards*



• ***Vacuum cleaners mounted on overhead cranes are being used efficiently in many plants.***
Photo courtesy U. S. Hoffman Corp.

the employee and for safety.

When floors are swept by push broom methods, unless they are wet down or sweeping compounds are used, dust will be stirred up. The fine dust will get into the air currents and will usually settle on walls, overhead structures and floors. Uneven floors and floors with cracks and crevices are never thoroughly cleaned by push broom because dust will be pushed into such places. Where the cleaning is done by heavy duty vacuum cleaning the work is done thoroughly and the dust is pulled out of cracks and crevices. Furthermore no dust is ever raised to settle elsewhere.

The cleaning of walls, overhead structures, and around machinery is the type of work that was almost completely neglected because once the dust had started to accumulate, it was difficult work removing it. Dust on walls and overhead structures can be blown down by compressed air or brushed down by hand but attempts to do this have proved detrimental, costly and completely unsatisfactory, and these methods are not now considered practical. Dust that is blown down is bound to scatter and settle elsewhere. This method certainly cannot be used without completely covering up everything in the plant because of the damage it would cause and if there is any appreciable amount of overhead dust the floor below will still have to be cleaned.

Heavy Duty Vacuum Cleaning Equipment has been developed to the extent that makes it both practical and economical to remove any quantities of dust accumulations on walls and overhead structural work. It is most important that the vacuum

The cleaning of floors, walls, and overhead structures is of major importance in any plan of general plant hygiene.

cleaning equipment be of adequate capacity to handle 25, 50 or 75 ft. of hose and even 100 ft. in some cases, depending upon the size of the buildings. The system should be capable of doing rapid cleaning whether there is a light coating of dust or whether the dust may be a few inches deep. When the operator is overhead doing the cleaning work his equipment must be capable of picking up thoroughly and rapidly the dust that he encounters as he goes along; therefore in selecting vacuum cleaning equipment, the purchaser should see that the machine is capable of heavy duty with dust collector tanks of a capacity sufficient to clean a considerable area. It is essential that the cleaning operator not stop work too frequently to empty the dust container. With equipment having a large dust container capacity an operator can save from one hour to two hours daily and consequently that much more area will be covered. This is extremely important in time saving where there are large areas to be cleaned or where there is considerable overhead dust to be removed.

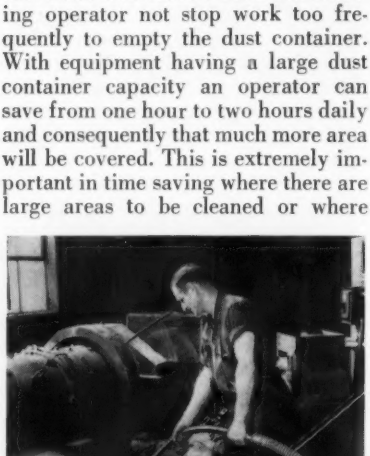
Overhead dust is considered one of the most serious hazards because it constantly filters down. Light dust floating in the air is easy to inhale and when dust is knocked down in quantity, as very often occurs, it will cause damage to products, excessive wear on machinery, damage to moulds in foundries, damage to electrical equipment, not to mention polluting the plant atmosphere.

In our own plant we are now using a U. S. Hoffman Vacuum Machine which can be suspended from a crane and moved along very quickly when cleaning crane runways, girders, etc.

Once a plant is thoroughly cleaned with proper vacuum cleaning equip-

(please turn to page 28)

• ***Ease of operation and adjustment features make industrial vacuum cleaners widely applicable.***
Photo courtesy Spencer Turbine Co.



• ***Floating dust created by a tumbling mill operation handled by vacuum cleaning equipment.***
Photo courtesy U. S. Hoffman Corp.

How Johns-Manville DEVELOPS Plant SAFETY

By FREDERICK G. LIPPERT, Safety Engineer, Johns-Manville Corporation

A WELL BALANCED safety procedure calls for specific attention to the engineering, educational and enforcement ends of the problem. What is a well-balanced safety program? If anything, from a three-legged stool to a safety program is well-balanced, it stands by itself. We want the program to stand by itself—so that its features will be used by the factory people, regardless of whether the Safety Engineer is 3 or 3,000 miles away. The well-balanced stool has three legs of equal length—the well-balanced safety program places equal emphasis on the three E's of accident prevention work: "Engineering, Education, Enforcement."

Granted that our goal is the prevention of accident losses, we must first consider the activities or features which we may wish to incorporate in the well-balanced program. In checking over available material:

1. List the various safety activities now being carried on by your company. Make a note as to whether their status is active or inactive, and whether they are effective or not.

2. List the activities carried on by companies similar to yours—either in the nature of their business or their organization structure.

To obtain data of this sort it will be necessary to check over the back issues of magazines pertaining to safety, or factory management; another way is to write or visit safety men of other concerns. I've never yet found a man engaged in safety work who wasn't glad to pass along information which might help someone who has a similar problem.

• *A power press guard made of transparent material.*

When you have compiled a list of possible material, classify it according to:

1. Its nature—does it fall under engineering, education, or enforcement?

2. Its ease of installation, operation and REVISION.

3. Its COST of installation.

4. The ease of measuring its effectiveness.

Now build an outline of your program, using those activities on the list you have prepared which are best suited to your needs. As you build

this outline, keep in mind that you wish to cover the "three E's"—engineering, education, enforcement—and make selections from your list.

Engineer Improvements

In selecting these activities, beware of the tendency to disregard those which pertain to engineering. Do not develop a program which will be purely a safety "propaganda" campaign. We hear much of the necessity for fighting hazards resulting from human failure—those which are usually called "carelessness accidents" or accidents resulting from "morale hazards." It is argued that the properly trained and supervised worker is so highly safety conscious that he will avoid the dangers of existing mechanical and physical hazards. For this reason our program must provide for study of existing mechanical equipment and layout, and job analysis, so that existing hazards may be engineered out of the picture, and future changes will conform to accepted safety standards.

Here are some suggestions for a well-balanced program:

Engineering	*Education*	*Enforcement*
1. Accident investigation	1. Accident investigation	1. Accident investigation
2. Inspection	2. Inspection	2. Inspection
3. Job Analysis	3. Job Analysis	3. Safety Rules
4. Guarding Program:	4. Posters	4. Foremen's safety meetings
a. Present plant and equipment	5. Safety meetings	
b. Future plant and equipment	a. employees	
	b. foremen	
	6. Job Training	
	7. Indoctrination of new employees	
	8. Contests	

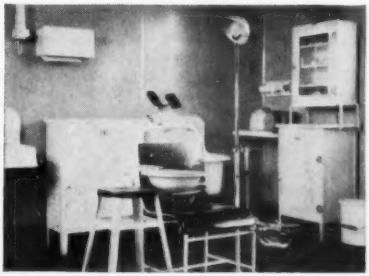
If you will build your list in this manner, you will note that some of the activities will fall under all three headings. Thus, if they are properly administered, all three phases of your program will be served, and we will be further along toward our goal of a well-balanced program.

For example: The Inspecting Committee discovers that sacks of raw material are leaning dangerously in the warehouse. They recommend study of the condition. A new method of stacking the sacks is developed, that insures solid, steady stacks. Thus, the hazard has been *engineered* out of existence, the Committee has had some *education* in applied safety, and the rule covering unsafe handling of materials has been *enforced.*

I want to emphasize the importance of estimating and planning. Spare no effort to investigate each proposed feature, ask the opinion of others in your company, regardless of whether you think they know much about safety. Sometimes you'll be surprised! And, after all, you are developing this program for the use of these "other people." They may not know what they want included in the program, but it's pretty certain that they will know what they don't want!

After your tentative program outline is completed (and don't forget that word "tentative"), work out the mechanics of its operation. In developing a system of accident investiga-

tion, make sure that the proposed routine fits into the existing method of handling reports. If you plan to hold regular safety meetings for foremen, decide whether it is better to have all foremen convened in a group, or whether departmental meetings are better. The size of the plant, the number of foremen, and the nature of the operations are deciding factors in this case. Don't order a large supply of safety posters until you know you have bulletin boards on which to post them, and a means of distributing them. If you are planning a system for plant inspection, make sure that recommendations submitted by the Inspecting Group will get to the attention of someone who can act on them. Too many important items are forgotten because they never reach the person who can approve the expenditure needed to carry them out. Here is where a definite guarding problem will help out.

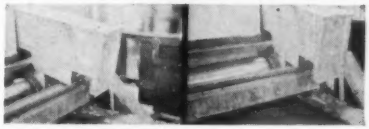


• ***The First Aid room in one of Johns-Manville smaller plants.***

• ***Guard on a sheet scorer.***

Next comes the actual job of putting the program in operation. Our

• **Before *safety inspection committee discovered the unguarded sprocket.***



• ***Note guards installed* after *inspection was made.***

aim is to have the program well-balanced. Therefore, pick out essential activities which cover the three main divisions of your effort—engineering, education, and enforcement—and install them first.

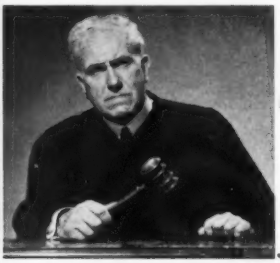
Your system for accident investigation, plant inspection, safety meetings, and posting of safety posters can be launched simultaneously, if details are worked out carefully, before hand. When these activities have "shaken down" and are running with a fair degree of smoothness, you have a substantial framework on which to build. You have a means of passing out information, and a means of collecting data which will enable you to check the progress of the work.

After these activities are running well—and a "well-balanced" framework is thus established—then is the time to round out the program by addition of other features.

Timing is an important factor, in the success of any accident prevention

(please turn to page 28)

Right off the Docket



The trend of litigation on workmen's health and accident compensation is reflected in these briefs of the latest and most representative cases coming to trial in the intervals between issues. Familiarity with this trend is important to every industrialist.

Blow on Head Results in Sinus Infection

The employee, an oil field worker, was struck on the head by an iron pipe. A number of stitches were taken in the wound and after a few days' rest the employee returned to work. He continued working for some time although experiencing head pains. Subsequent medical examination disclosed an infection of the left sinus. The doctor testified that the condition was progressive, and that the injury was probably permanent. Two lower courts had refused an award. The Commission of Appeals reversed their decisions.

Texas Employers' Ins. Ass'n vs Roberts (Texas) 139 S.W. 2nd 80 (April 1940)

Strangulated Hernia Brings Award

At the time the employee in this case was employed by the defendant coal company he was examined by the company's physician who discovered that the employee was afflicted with a small indirect hernia on the left side. The doctor reported this fact to the employee and told him the injury was non-disabling. After working about three months, the employee slipped and fell and immediately experienced pain. Examination revealed a strangulation of his hernia and an operation was performed.

The provisions of the Colorado Compensation Act provide, that for an employee to get compensation for hernia, he must prove: First, that its appearance was accompanied by pain; second, that it was immediately preceded by some accidental strain suffered in the course of employment. The defendant contended that a strangulation of a pre-existing hernia did not fall within these provisions. The Court in sustaining an award held that under a liberal construction of the Act the strangulation in this case constituted a compensable injury.

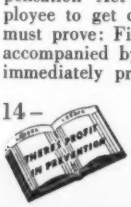
Spirakoff vs Pluto Coal Mining Co. (Colorado) 100 Pac. 2nd 154 (Feb. 1940)

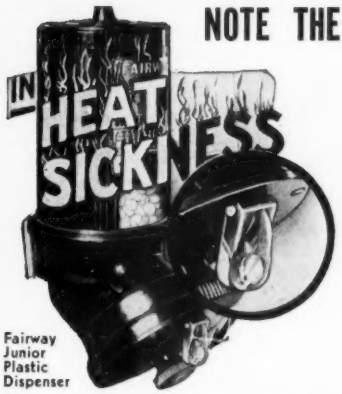
Electric Shock Causes Death of Miner

The question in this case was whether the employee died from natural causes, or from an accident due to his employment. The employee was working a coal loading machine driven by electricity. He had his hand on the lever when suddenly he staggered back and fell, and died within a few minutes. There was evidence of burns on his hand. The machine had been repaired the day before and was protected by a system of fuses and a ground wire. One electrician testified that he had known men operating such machines to receive electrical shocks. The company doctor testified the death was due to natural causes. The employee had been in good health and spirits prior to the happening of this accident.

The lower Courts refused an award. The Supreme Court reversed them, holding that there was sufficient evidence to warrant an award on the theory that the death was caused by an electric shock in the course of employment.

Superior Coal vs. Industrial Com. (Ill.) 26 N.E. 2nd 866 (April 1940)





Fairway Junior Plastic Dispenser

NOTE THE TRANSPARENT DISCHARGE

This feature alone should justify Fairway Dispenser installations

Years of pioneering—resulting in 3 preferred tablet services and the Widest range of dispensers

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FAIRWAY LABORATORIES, INC.

1534 Hadley Street St. Louis, Mo.

Fairway "Saltabs" Registered U. S. Patent Office

Hernia Held to Be "Accident"

While delivering milk it was necessary for the employee to lift a box of ice weighing 125 to 150 lbs. In doing this, the employee suffered a hernia. The Compensation Act of North Carolina made no provision for compensation for hernia as an occupational disease. The Court said, that a rupture under the strain of heavy lifting may be considered part of fortuitous circumstances making up "accident" and was not a natural and probable result of the work being done, so that the consequent hernia was "injury by accident arising out of and within the course of employment" within the Workmen's Compensation Act, and was compensable.

Smith vs Cabarrus Creamery Co. (N.C.) 8 S.E. 2nd 231 (April 1940)

Pneumonia Caused by Exposure to Changing Temperatures Held Compensable

The husband of the claimant in this case died from pneumonia on May 19, 1936. The claim was made that the pneumonia had been contracted on May 9, 1936, and that it resulted from the conditions under which the employee was working. The employee, on that day, was fixing a steel, gas and oil tank. There were three openings in the tank, one of 20 inches, and the other two of 10 inches each. The temperature outside of the tank varied from 69 to 88 degrees. Inside the tank the temperature ranged from 110 to 120 degrees. The employee, in the course of his work, repeatedly had to go in and out of the tank. When he emerged from the hot interior, he was wet with perspiration. Late in the afternoon he felt pain in the chest. The following day he was quite ill. He was taken to a hospital and found to be suffering from pneumonia.

The medical testimony was to the effect that the repeated exposures to the marked differences in temperature was the predisposing factor in the development of the pneumonia. The Court said the evidence was sufficient under the Ohio law to warrant an award. The conditions were different than those under which the employee ordinarily worked; and was a compensable injury.

Johnson vs Industrial Commission (Ohio) 63 Oh. App. 544 (April 1939)

LEHIGH SAFETY SHOES

ARE BUILT TO FIT INTO INDUSTRY

WHEN it comes to safety shoes, every industry offers its own special problems. Hot floors, oily floors, floors wet with caustic solutions, will rot ordinary leather or rubber soles quickly. Slippery floors cause frequent skids and falls, often resulting in serious bodily injury. Rough, abrasive underfoot conditions wear out regular soles in no time at all. And foot and toe injuries are ever-present . . . *one out of every four industrial injuries* . . . too costly in man-hours and money to be lightly put aside.

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SEND FOR THE NEW LEHIGH CATALOG NO. 9 — OR CONSULT ABOUT Y

LEHIGH SAFETY SHOE CO., Inc. A

Men, too, are a problem. Some can wear tough, heavy-duty shoes. Older men prefer softer leathers, and easy-flexing soles for comfort. Some feet are broad, others narrow. Some are fat, others bony. How, with all these variables, can industry hope to fit its men with shoes that will give the utmost in comfort, the longest possible service, and the maximum in toe protection and skid prevention?

The Lehigh Safety Shoe Co. was one of the pioneers in making safe shoes for industry. We have spent years working in the closest collaboration with safety men inside some of the nation's largest plants. We have made exhaustive studies of the working conditions and the hazards peculiar to most major industries. And long ago, we came to the conclusion that industry cannot successfully **fit itself into** a few, standardized "stock" types of safety shoes. Accordingly, we have designed and built the broadest selection of safety shoe types offered by any manufacturer... **60 different constructions,** including eight different types of soles on leather shoes alone, to meet varying industrial needs.

What is more, Lehigh has adapted its **service** as well as its shoes, to fit the needs of every industry. Many large plants which maintain their own safety shoe departments, count on us for prompt delivery of thousands of pairs at a time. But for the small plant, with no physical facilities for stocking safety shoes, we maintain a complete in-stock department from which any type or style of safety shoe in any size and width may be ordered . . . **a pair at a time,** if desired!

This is what we mean when we say "Lehigh Safety Shoes Are Built To Fit Into Industry"...the right shoe for every job, every floor, every man...the right kind of service for every size plant.

ABOUT YOUR REQUIREMENTS

C. *Allentown, Pa.*

The first part of this series appeared in the June issue of OCCUPATIONAL HAZARDS. *Dermatitis was defined and other background material provided for a better understanding of the subject.*

QUESTION 5

What are the most common types of Occupational Dermatitis?

The types of irritation which may result from industrial causes are many, and the more frequent of which are:

acne from non-saponifiable waxes,
burns from chemicals and radiation,
callouses from pressure and friction,
chilblains from moisture and cold,
folliculitis from oil and dirt,
radio dermatitis from X-ray.
ulcers from certain chemical exposures,
blebs, not burns or friction blisters, but such as ivy and other poisonous substances.

Some of the infections which commonly manifest themselves in the skin are:

actinomycosis—probably fungus
anthrax—bacteria
blastomycosis—yeast
erysipeloid—bacteria
tinea—fungus
impetigo—bacteria
paranychias—bacteria
pus infections—bacteria

QUESTION 6

Why do some workers react to Dermatitis-causing substances while others do not?

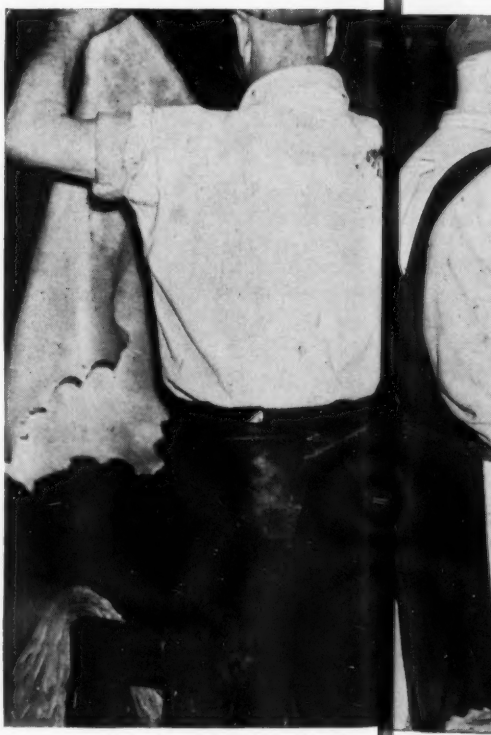
A number of factors account for the fact that in a group of workers exposed to the same substances some may develop dermatitis, and others may not. The most important of these factors is allergy, which is something

Proper Sanitation Facilities and Pr... for Control of Industr...

By E. WAR... THOMPSON
Industrial Hygienist, Americ... Mutual Liab...

PA...

A series of articles comprising twelve questions about dermatitis. Answers are sufficiently comprehen- ...sive that a ...ing a derm... ...it with a ...



• *Workers engaged in tanning ...ions may b... matitis from the chrome solu...*

...and Protective Measures ... of Industrial Dermatitis

...THOMPSON

...erica... *Mutual Liability Insurance Company*

...PA...

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about the person himself which has produced a hypersensitivity to a certain substance. In another individual, or perhaps in the majority of cases, the same substance does not produce any difficulty. The exact cause of allergic reaction is not definitely known. Perhaps the most popular illustration of an allergic reaction is hay fever and asthma, in which some people react unfavorably to certain pollens, and other people are not affected by them at all. Incidentally, persons who are known to suffer from hay fever should not be employed in dermatitis hazards, because the same allergy will cause dermatitis response. Without being able to define accurately what allergy is, the principal purpose of this article is to differentiate between the dermatitis hazards which are perfectly obvious (those in which the substances are primary irritants such as acids, caustics and solvents such as chromic acid, caustic soda and gasoline, and for which any industrial plant can devise proper and satisfactory control measures), and those substances which are selective in the people in whom they cause difficulty, and about whose allergic reaction to them a good deal must be learned before control measures can be made to operate satisfactorily.

QUESTION 7

Is Occupational Dermatitis Contagious?

Most cases of dermatitis are not contagious because there is nothing about the chemical or mechanical causes which operates in any way except directly on the individuals exposed. On the other hand, all of the kinds of dermatitis which are related to infective media can be transmitted from one person to another. Boils and impetigo can spread like wild fire

through a plant unless strict isolation of the ailing worker is maintained. A striking example of this is epidermophytosis, or athlete's foot, where one worker so infected can inoculate the locker room floor, requiring a live steam bath to kill the fungus to prevent an epidemic. Because there are so many epidemics of boils, impetigo, etc., it is very important that an outbreak of dermatitis be viewed in the light of the possibilities of contagion. Therefore, it is necessary to keep the infected worker, or workers, from contact with others until the true nature of the difficulty is determined accurately by the physician.

** Wherever men are required to handle acids they should be provided with rubber gloves to protect their hands; goggles to shield their eyes.*

Part Three of this Series will be presented next month

Five Classes of Safety Goggles

Safety goggles may be divided into

1. Impact.
2. Dust.
3. Splash.
4. Fumes or gases.
5. Glare and injurious light rays.

Both the lens and frame of safety goggles should be selected to fit the hazard to which your workman is exposed.

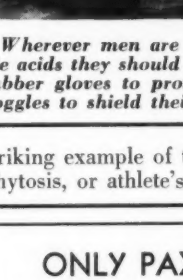
ONLY PAXSAVALENED PAX HEAVY DUTY—

The BLAND, SUPERFATTED Skin Cleanser—

used for over 16 years by many of the world's largest industries, can offer you the

CLEANSING EFFICIENCY,
the SKIN PROTECTION,
and the WASHROOM ECONOMY

created by PAXSAVALENE—it cleans and protects the dirtiest hands!



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New Industrial Control Standard

The National Electrical Manufacturers Association announces the release of a new Industrial Control Standard superseding the edition of August, 1937. The new publication contains general standards and definitions applying to resistors, contactors, brakes, auto-transformers and reactors, a-c and d-c controllers; machine tool, synchronous motor, printing press and mine hoist control; magnetic control for steel mill auxiliaries, overhead traveling and floor operated cranes; terminal markings and guides to specifications for building equipment control apparatus. Copy of the Standard may be obtained for $1.00 by writing to the National Electrical Manufacturers Association, 155 East 44th Street, New York, N.Y.

New Respirator Development

Development of an exceptionally light and efficient respirator to protect the respiratory system against dusts, pollen and bacteria has been announced by the American Optical Company of Southbridge, Mass.

Weighing only an ounce and a half, and excluding particles as small as a micron—1/25,000 of an inch—the device was developed by W. H. Lehmberg, one of the company's research scientists, to provide comfortable protection for those working in dusts; persons allergic to pollens causing hay fever and asthma; and doctors, nurses and patients exposed to certain air-borne bacteria.

The effectiveness of the respirator, according to the scientist, is due to four improvements: A new method of making the filter unit, resulting in an extremely large, efficient filter area for the size of the mask; a new and efficient exhalation valve; a new, self-equalizing, double headband which

• *Two workers packing abrasives into cans—an especially dusty job—are protected by a New Respirator.*

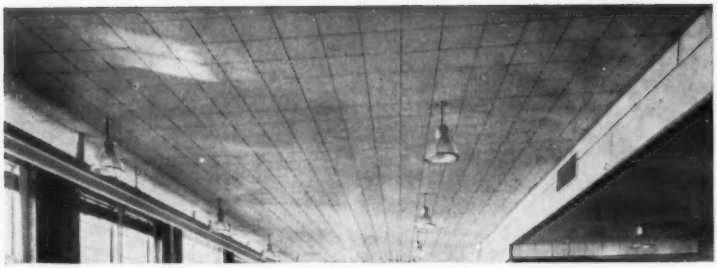
holds the respirator securely but comfortably against the face regardless of the position of the head; and a facial design that enables one to wear the device with perfect comfort.

Tests were made by the U.S. Bureau of Mines which approved the respirator for protection against the inhalation of pneumoconiosis (silicosis and asbestosis)—producing dusts; and nuisance dusts as alumnium, celluose, cement, charcoal, coal, coke, flour, gypsum, iron ore, limestone and wood.

Keep Water Clean

On a construction job recently six cases of "trench mouth" resulted from the use of a water bucket and dipper. Many other methods of providing drinking water are available.

Among acceptable substitutes are individual paper cups, portable sanitary drinking fountains, fixed sanitary drinking fountains, and personal individual cups.



NOISE— *It's harmful effect on workers*

• *Ceiling of modern machine shop acoustically treated.*

THERE is a growing recognition of noise as a definite occupational hazard, not only to the efficiency of industrial workers but to their physical and mental well being as well. Certainly no factor which increases muscular tension, decreases electrical resistance, depresses the breathing and steps up the consumption of bodily energy should be regarded lightly when the hazards of employment are under consideration.

In a recent anti-noise conference held in England, Dr. Dan McKenzie revealed the interesting fact that during the World War some men were actually killed by the shock of sound waves resulting from high explosives. That, of course, is an extreme. So, too, are the all too well known cases of shell shock where permanent or recurrent impairment of the mental faculties has been caused by the shock of sound waves from exploding shells.

Noise eruptions so violent as to cause death or mental impairment could only come in industry through accidents of the kind which cannot be called preventable. These extremes illustrate, however, that noise does have a definite effect on physical and mental health, and point to the desirability of using all possible methods of control.

Tests on Noise

According to Donald A. Laird, Ph.D., Sci.D., of Colgate University, a well known authority on the subject, noise interferes with human welfare because it causes a fear reaction

By M. R. PRICE, President Union Acoustical Company

Noise exposes workers to various physical effects. Various tests have demonstrated where noise increases brain pressure, and depresses breathing

which is definitely more marked than the simple mental sense of fear. Almost everyone is familiar with that instinctive fear reaction in the muscular system, evidenced by the sudden cold sweat when an accident has been narrowly averted, the sinking feeling in the stomach or the accelerated action of the heart at a sudden sharp sound.

That this bodily reaction is not controlled by the mind has been shown in numerous experiments. Tests at the University of Illinois showed that the muscles contract automatically within less than one tenthousandth of a second after a loud whistle is blown, and that the contraction takes place whether the whistle sound is expected or not, indicating that the bodily reaction cannot be voluntarily controlled. Experiments at the University of Michigan proved that the breathing of a frog was depressed by the sound from a tuning fork, even after the brain had been removed, showing that the bodily fear reaction starts low in the animal scale and is not controlled mentally.

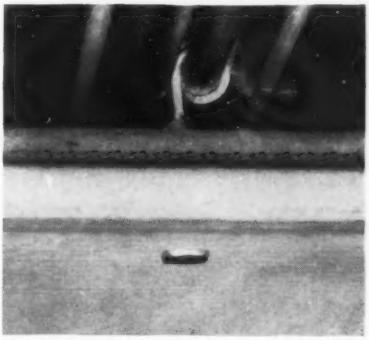
The value of such experiments as these is that they show conclusively that the theory that noise is something that workers can get used to is a fallacy. The physical effects of the noise continue, even when that noise is entirely familiar to the worker and expected.

Physical Effects of Noise

Among these physical effects are the lowering of the electrical resistance of the skin, the increase of brain pressure, depressing the digestive contractions of the stomach, depressing the breathing, interfering with the secretion of saliva and increasing the urine. Tests in England showed that there was a decrease in the size of fingers, legs and arms under conditions of continued noise, due probably to muscular contraction.

Control of Noise

It would be foolish, of course, to say that all noise in industrial establishments could be readily controlled. Great machines like metal rolling mills and heavy presses are operated under such conditions that noise control or prevention would be exceedingly difficult. Generally speaking, however, such machinery is operated



• *New system of ceiling construction which permits installation of an acoustical material in ceiling.*

in high roofed rooms where steel girders, overhead handling equipment and control booths reduce sound reflection to a very considerable extent.

In many manufacturing depart-

ments where ordinary or light machining operations are performed or where small assembly work is done the ceilings are comparatively low and present a plane surface which tosses the sound waves back again and again until every original small disturbance has been magnified and distorted, with the result that a volume of sound energy is built up which has definite effect on the workers.

A few major industrial firms aware of the noise hazard have provided their employees with various types of ear stoppers. This method has been found to be effective.

Sound control has two definite objectives. One is to decrease the transmission of sound through walls and partitions and thereby exclude outside noises. The other is to decrease sound reflection from walls or ceilings. This last is accomplished by the use of acoustic material on walls and ceilings. Acoustic tile has millions of tiny air spaces which absorb the sound where a dense surface would throw it back.

The greater share of acoustic treatment of walls and ceilings to dampen off sound reflection has so far been done in offices, schools and public places. It has not been applicable to manufacturing departments for two very good reasons. One was the wide spread use of overhead main and counter shafts for power transmission, which required ceiling construction with wood members frequently spaced to hold lag screws. That obstacle has been largely removed by the increased use of individual electric drives, which offer the advantage of power

(Please turn to page 29)

HOT WEATHER AIDS

• SWEAT PADS

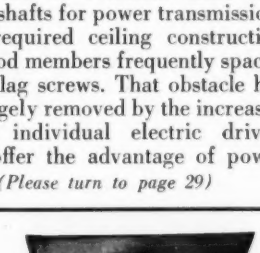
Worn across forehead to absorb perspiration. Prevents its running onto work, into eyes or "fogging" goggles. Two types: Cellulose Sponge, with special reinforcement and elastic straps. Also replaceable Cotton Pads, held with spring clips. Inexpensive time savers. Get prices.

• SALT TABLETS and DISPENSERS

Full line of leading brands. All types of dispensers —metal, glass, plastic or paper. Let us quote on your needs.

• ANTI-MIST FOR GOGGLES

Rub on lenses, wipe clean, and glasses will not fog or sweat for hours. Get prices.



Pulmosan Respirators

In hot weather, the comfort, lightness and easy breathing of Pulmosan Respirators is especially valuable to workers. Extensive line for every hazard. Tell us your needs.

PULMOSAN
SAFETY EQUIPMENT CORP.
Dept. OH, 176 Johnson St., Brooklyn, N.Y.

• **WRITE** for new leaflet on Hot Weather Safety Aids and Hygiene.

Safety Shoe Standards to be Drawn

THE Safety Code Correlating Committee of the American Standards Association recommended that a project on performance requirements for safety shoes and other footwear used to protect workmen from occupational hazards be undertaken by the American Standards Association.

In their discussion of the need for standards for safety shoes the committee followed the recommendations of a General Industrial Conference held under the auspices of the American Standards Association. At this conference safety shoe manufacturers, users, and safety experts unanimously urged the need for standardization work in this field.

It was pointed out that safety shoes are an important adjunct to accident prevention in many industries. In fact, since the first steel toe cap was inserted in an industrial shoe in 1925, the idea of safety shoes has grown to the proportions of a big business, producing 3,000,000 pairs of highly specialized shoes a year. One firm, for example, shows a saving of $250,000 a year in foot accidents since adopting safety shoes. A railroad buys 12 to 15 kinds of shoes to protect the worker against as many different types of dangers—to resist acid, to insulate against electricity, to protect against falling objects, among others.

As members of the committee pointed out, successful use of safety shoes in accident prevention depends to a large extent upon knowing just what the shoe will stand. Lack of adequate specifications and performance requirements makes it difficult at present to make an intelligent choice from the many brands of safety shoes now available. For instance, it was brought out that some shoes on the market have collapsed as a result of soaking by rain and snow, etc.

To remedy this situation the committee proposed that the American Standards Association develop performance requirements and methods of test for protective features of occupational footwear including resistance to impact or pressure, puncture, oil, acid, other chemicals, and heat; resistance to slipping; electrical conductivity, etc.

Future Plans

Results of the meeting will come before the Standards Council of the American Standards Association at its next meeting. Following that an A.S.A. committee, representing manufacturers and users of safety shoes as well as safety experts, will be set up and draft specific standards. Trade associations; public utilities; U. S. Government Insurance companies; shoe manufacturers, and engineering bodies have already indicated a desire to take part in this work.

WHEN THE CALL IS FOR
"A BANDAGE—QUICK!"
Use **Band-me-Quick** new Individual Bandage. Made of Gauztex. Self-adhering gauze sticks only to itself—not to flesh. Medicated pad. 9-inch length. Keeps out dirt yet air circulates freely. No **Throw-Aways.** Each Band - me - Quick cellophane wrapped. **Stays fresh.** 100 to a box. Order from supply house or GENERAL BANDAGES INC., 508 S. Dearborn St., Chicago.

GAUZTEX
Band-me-Quick
INDIVIDUAL BANDAGE

This month in *Washington*

By W. T. CAMERON, Chief Safety Adviser, Division of Labor Standards, U. S. Department of Labor

Skill Plus Attitude

A SALESMAN who drives his car about 25,000 miles a year, recently said to me, "If I had my choice, I'd prefer to share the country roads with no one but truck drivers and the city streets with no one but taxi drivers. Some of them may be hard-boiled but at least you know what they are going to do!" In other words, a man who drives as a big part of *his* job prefers to drive with others whose *profession* is driving.

Did you ever ride with one of those taxi drivers whose policy seems to be "The man with the greatest amount of nerve has the right of way," who can squeeze through holes that all but blisters the paint on the fenders, but yet who gets you there without a scratch? You may be somewhat breathless and relieved when you get there but you have to admit that he knows his car, what it will do, and, all in all, is a pretty skillful driver.

Records of commercial fleets and cab companies seem to bear out the fact that even with all their apparent recklessness these fellows who drive for a living have far fewer accidents per 100,000 miles travelled than the rank and file of the more casual and albeit more conscientious driver. These professional gasoline buggy pushers can certainly be said to be the personification of skill and expertness but, judging from personal observation, many of them seem to lack what might be called, for want of a better word, proper "attitude."

Isn't this true of many jobs we see being performed every day by workers in industry and on construction projects? For instance, the skilled pattern maker who has worked for twenty years on an unguarded circular saw without losing any fingers and considers it an insult to his ability when you suggest a guard! The molder whose aim is so good that he has never spilled hot iron on his legs or

feet or splashed it in his eyes and who pooh-poohs the necessity for leggings, Congress shoes and goggles? The structural iron worker who walks a 6-inch I beam 17 stories up and laughs at the idea of a safety belt and a life line!

To influence human behavior is much harder than teaching manual dexterity, co-ordination and skill. So it is necessary to set up as a part of every safety program, whether it be for industrial, home or street and highway safety, a plan for influencing *attitudes*. We all know that it is far easier to teach a high school boy how to drive a car skillfully, efficiently and expertly than it is to get across to him his responsibility to society, his duty to himself and his family, or to develop habits of courtesy and law observance.

Being more of an intangible, much of our "attitude influencing" has been misguided or misdirected. In the past we have depended too much on fear motivation—dramatizing the disastrous and painful results of an accident—what will happen to our job if a shop rule is violated—out on the highway, the fear of the long arm of the law.

Teaching Workers

To develop both skills and attitudes is the job facing all of us interested in creating a safer America. This involves teaching workers and drivers and all of us how to do our daily tasks with skill and confidence and understanding and, at the same time, of creating an inner urge to do that job without violating the rights of others, without hurting ourselves or endangering the lives of others.

THERMOPLEGIA ... *thief of profits*

Prevent it and preserve workers' health and lives with quick-acting SalTabs

THERMOPLEGIA is a thief with many names—alias heat sickness, alias heat cramps, alias heat prostration. It steals profits, workers' health, may even take toll in lives. It comes from loss of body salt in perspiration. Salt lost must be replaced or work is slowed by extreme weakness which may end in violent cramps or collapse. Prevent this with Sterling SalTabs of refined salt. This treatment is recommended by physicians to restore the salt balance of blood and tissues. Protect your workers at little cost with SalTabs. Ask your supplier, International representative or write International Salt Company, Incorporated, Scranton, Pa.

• SalTabs dispensers: for 1,000 tablets $4; for 500 tablets $3.25. SalTabs are made of refined salt—also available made of 70% refined salt and 30% dextrose; in bulk lots or boxes of 1,000.

Sterling SALTABS

The quick-acting salt tablets

Vacuum Cleaning

(Continued from page 10)

ment it is not a difficult job to maintain it periodically. Light coatings of dust on walls and overhead structures can be quickly and thoroughly removed.

Many plants are having the interior surfaces painted with light colored paint, particularly aluminum. Vacuum cleaning has been found an accepted method and the practical means of cleaning the surfaces and removing dust accumulations prior to painting. Many companies, especially foundries, have found it possible to so thoroughly clean the surfaces that no further work is necessary before the painting is applied. Some companies who started to prepare their plants for painting by hand-cleaning methods found the work so slow and expensive that they have put in vacuum cleaning equipment and were able to do the work in much less time. Furthermore, no dust was raised. After the surfaces are newly painted the vacuum cleaning equipment is available for periodic cleaning which preserves the life of the paint. In other words, why spend dollars for painting surfaces without protecting them and extending the life of the paint? Dust destroys paint.

Other Uses for Vacuum Cleaning Equipment

There are other valuable uses to which vacuum cleaning equipment can be put; for instance in foundries many companies are using the equipment for cleaning out moulds, in preference to using expensive compressed air and blowing the dust all over the plant. Annealing pits can be cleaned out. The filers and dust bags in low pressure dust collecting systems may be cleaned, thus increasing the efficiency of such equipment. Bins and pattern storages may be cleaned as well as core racks, large plates, and trays.

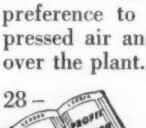
Since most foundries use hand methods to a considerable extent, satisfactory dust control in many establishments need not involve elaborate local exhaust systems. Rather, it will be largely a matter of housekeeping and the use of operating methods and ways of doing work which produce the least possible amount of dust. Special technical knowledge is usually necessary to design an effective exhaust system, but to keep the plant clean and orderly requires only the will to do and the application of common sense. Many foundries and other manufacturing plants allow discarded material to accumulate, thereby taking up valuable floor space, catching and holding dust and making regular plant clean-up a difficult job. In many cases disposal or proper storage of seldom used patterns, old flasks, and other discarded work materials will more than pay for itself in increased usable floor space and in greater ease of regular clean-up.

Johns-Manville . . .

(Continued from page 13)

effort. For example: Don't stage a contest until you are sure that the organization from top men down, is aware of the fact that they are working to prevent accidents.

Up to this point, I've suggested a possible way of making sure that your program, as you start it off, is well-



balanced. It is equally important to measure the effectiveness of each feature, as time goes on. It is more of a job to keep it "in balance" than to start if off "balanced." The reason for this is that the factory people who operate the program have a natural tendency to make their own interpretation of the prescribed method of procedure.

In some cases a department superintendent may have his foreman's report of accident investigation filled out by his clerk, because the foreman does not express himself clearly and has poor handwriting. Thus the educational benefit to the foreman is lost.

For this reason, I suggest:

1. Get opinions from the users of the program—Periodically.

2. Review accident reports, recommendations, and meeting minutes—Periodically.

3. Don't hesitate to back-water, and change your plan to fit conditions, where there are good reasons for doing so.

Noise . . .

(Continued from page 24)

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consumption for each piece of machinery only when that piece of machinery is in operation.

When the ceilings were cleared, however, and the noise hazard was thereby increased the use of acoustical ceilings remained a problem because of the lack of any construction method which would provide a permanently safe installation of such a ceiling by attachment to the steel girders from which a ceiling had to be suspended.

New Ceiling Construction

This last obstacle has now been removed by the introduction of a new system of ceiling construction which permits the permanent installation of a fireproof and acoustical ceiling. The basis of this new ceiling construction is an ingenious nailing channel, which is wire tied directly to the steel girders or to the steel drop frame if air space is being left above the ceiling, much as steel lath has been wired.

This nailing channel is in the form of a letter W, except that the bottoms of the twin channels are round. Each channel is about half an inch wide and a quarter inch steel rod is spot welded into each in such position that there is even space between its surface and the channel walls. In construction this double channel is wired to the supporting steel work in inverted position. First course of the ceiling is two $\frac{3}{8}$" sheets of gypsum board, bonded together with 14 gauge wire cloth between them.

The gypsum board is nailed to the channels with a special wire nail which is guided by channel walls so that it wraps tightly around the wire rod, holding more firmly and permanently than a nail driven straight into any sort of material. Acoustic tile is then affixed to the gypsum board with screws, which are solidly held by the wire cloth core of the gypsum board.

The new form of ceiling is of course easy to install, because it goes on in large sheets, and is entirely rigid, level and safe. But best of all it offers a practical method of accomplishing a good measure of sound control in manufacturing departments which will greatly enhance the health and comfort of workers and increase the officiency of operation.

New Produ

HEEL GUARD. A new safety device for workers in shipping rooms, platforms, warehouses, docks, etc., designed to protect the rear of the ankles from injury by hand trucks or similar vehicles, is announced by the Pulmosan Safety Equipment Corp., Brooklyn, N.Y.

This new device, called Heel Guard No. 650, is constructed of 14 gauge aluminum for maximum strength, lightness and durability. The metal spur in back protects the ankle from any blow, while the wide aluminum sheeting at the side of the shoe assures a firm, shockproof fit. A heavy metal bank running under the arch of the foot, further prevents any slipping or twisting of the Heel Guard. The entire assembly is kept snugly fitted by means of a strong web strap.

The Heel Guard No. 650 permits full freedom of action and natural walking. It is made in one size, suitable for most shoes.

FACE SHIELD. A new B & C face shield with a plastacele window that slides in and out of a fibre frame, making replacement practical at a fraction of the cost is announced by The Boyer & Campbell Company, Detroit.

Besides simplifying replacement the fibre frame affords considerably more face protection than the conventional metal bound type. This frame is interchangeable on all models of B & C face shields except 10 and 20, making of the #40 "four and one" a "five and one" instead. The "five and one" are:

The New Fibre Frame with replaceable plastacele window, which is ideally adapted to spot, flash, and gun welding, buffing, polishing, wire brushing; A 24-Mesh Monel Screen Window recommended for babbitting, heat protection, heavy scale, band sawyers; Fibre Front and Glass Holder that gives complete protection for acetylene welding, burning, scarfing, etc.; Fibre

Crown and Rubber Apron, which gives broad protection for acid workers; Coventional type of metal bound plastacele window.

SAFETY WINDOW SCAFFOLD. A new piece of maintenance equipment on the market is the Save-ty Window Scaffold manufactured by Green Duck Company,

Additional information and descriptive literature on any of the products mentioned in this service department may be obtained by writing **Dept. N,** OCCUPATIONAL HAZARDS, *812 Huron Road, Cleveland, Ohio.*

THE FIELD

Chicago. This unique device clamps onto the inside sill and is braced against the outside wall making a very substantial

working scaffold for such jobs as glazing, caulking, or painting windows—hanging or taking down awnings—window washing—and many other "out-the-window" jobs. The sturdy angle-iron frame is rigidly cross-braced and the manufacturer claims that it is capable of supporting 500 lbs. with safety.

The scaffold is adjustable so that it will fit any sill, and has a 36" high back guard rail and side supports. The brackets and clamps are rubber padded to prevent marring sill or wall. The entire scaffold folds compactly for carrying and weighs only 22½ lbs. It can also be converted into a sling or "Bo'sun's Chair."

Statements made in connection with any product mentioned in this service department are based on manufacturers claims. Although these claims are believed to be true, this magazine does not guarantee that to be the case.

NON-SLIP PAINT FOR FLOORS. A rubber base paint combined with an abrasive that takes the skid out of floors of all kinds—concrete, wood, painted, etc. Applied with a brush, SAFE-T-STEP is the name of a new type of coating now put on the market by the Truscon Laboratories of Detroit, manufacturers of many kinds of Waterproofings, Paint, and Varnishes.

Nonskid qualities have been combined with the tough, wear-resistant characteristics of rubber resin in producing a paint coating that gives good wear on floors—concrete or wood—and is non-slippery. The material is effective both on wetted or oil-splashed floors and can be applied over an old coat of paint. It requires no special preparation of the floor aside from ordinary care and having the surface clean, dry, and free from oil and grease at time of application. Dries within 4 or 5 hours; may be walked on next day under good drying conditions.

SAFE-T-STEP is furnished in four colors—Concrete Gray, Tile Red, Spanish Green, Linoleum Brown.

FIRE EXTINGUISHERS. The Buffalo Fire Appliance Corp., Buffalo, New York, has just announced two new fire extinguishers, of the carbon tetrachloride vaporizing liquid type. The value of these larger sizes has been dramatically proved in protecting fire hazards found around paint spray booths, large electric motors, power sub stations and on large trucks and auto transports.

The new extinguishers have an extra heavy drawn brass seamless shell. The top and bottom sections are made of red brass castings. Full information for operating the extinguishers is carried on the name plate.

Both the new one and two gallon extinguishers have been tested and fully approved by the Underwriters Laboratories.

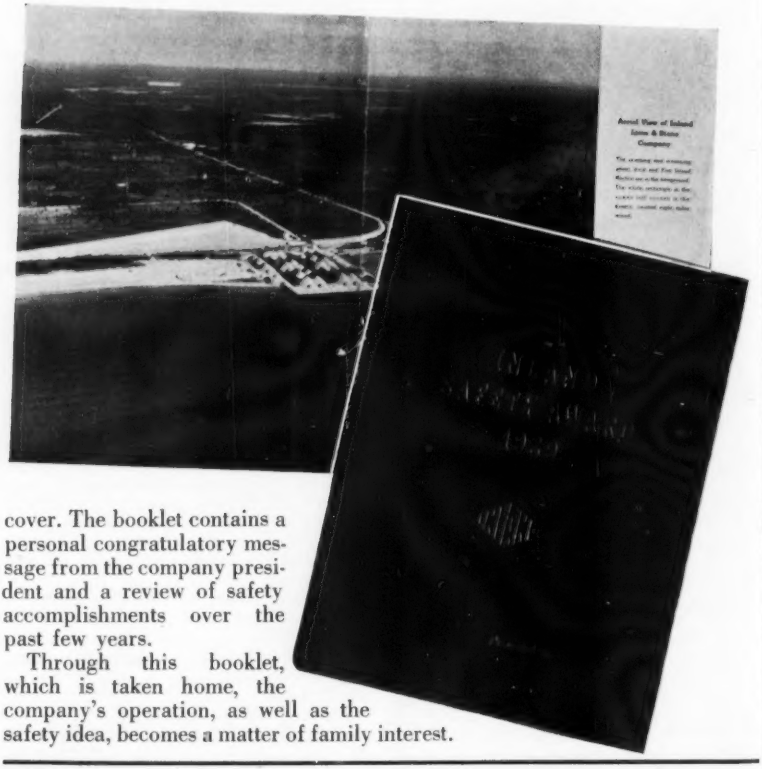
Inland Sells Safety Idea

Inland Lime and Stone Company operates one of the largest stone plants in the country. They have always laid great stress on safety in their quarry and crushing plant at Port Inland. Each year different plans for safe operation are developed. This year, after the completion of the safety record for 1939, a special meeting was held and a personalized book, as illustrated, was given to each man. His name appeared in gold on the cover. The booklet contains a personal congratulatory message from the company president and a review of safety accomplishments over the past few years.

Through this booklet, which is taken home, the company's operation, as well as the safety idea, becomes a matter of family interest.

Many firms are establishing the practice of making awards for safety. They see in such a plan the opportunity of keeping safety interest at a high pitch. Booklets, pins, honorary buttons, personal items, etc., are a few of the various types of awards being presented.

If your own plant has had unusual experience with awards, tell us about it. We will pass the idea along to the rest of our readers.



HELP HIM KEEP HEALTHY

Occupational Hazard No. 1 can well be lack of adequate, properly-designed plumbing facilities. For neglect here can lead to sickness, high labor turnover—employee dissatisfaction—reduced efficiency.

Crane specializes in industrial plumbing equipment that offers definite aid in preserving and improving employee health . . . equipment with the durability that cuts maintenance cost by withstanding hardest use. And Crane, through its wide research, can help YOU avoid mistakes in planning plumbing improvements.

For suggestions to improve employee health and relations, you'll want to read the Crane booklet, "Crane Plumbing for Industrial and Commercial Buildings." It gives complete facts about Crane industrial plumbing equipment—valuable "pointers" on solving industrial sanitation problems. Send today for your FREE copy!

1940 OUR 85th YEAR

CRANE

VALVES • FITTINGS
PIPE • PLUMBING
HEATING • PUMPS

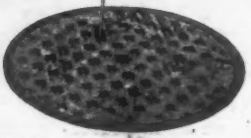
CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE, CHICAGO

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

Ready for You!

The New MSA *Model 2*

A COMPACT, SIMPLIFI
COMBUSTIBLE GAS INDICAT



DEPENDABILITY! Employs the same proved operating principle as Model 1 —of which thousands are in service— the only available instruments of this type with a single control.

TRUE ONE-HAND OPERATION! Explosimeter *Model 2* requires the use of but one hand—leaving other entirely free to handle sampling line or probe.

ONE-PIECE FLOW SYSTEM! Cast integral with case—no tubing or connections to leak.

IMMEDIATE RESPONSE! Positive reading on second squeeze of bulb (with 5 ft. sampling line).

EASY-READING METER! Needle is always in view at any position on dial. Meter is a rugged airplane-type jeweled instrument—sturdy and well guarded.

LONG BATTERY LIFE! The standard flashlight batteries employed provide more than 10 hours of *continuous* operation—from 2 to 3 times the capacity of other combustible gas indicators.

BUILT-IN FILTER CHAMBER! With cotton insert, traps dust and moisture —or with charcoal cartridge, differentiates between illuminating gas and condensable, combustible vapors such as gasoline.

ON-OFF SIGNAL BAR! This device on control knob is raised when current is turned on, drops flush with knob when current is turned off—prevents instrument from being left with current on.

ON OFF

SPARE FILAMENT IN CASE! While the low-cost, replaceable single filament used in Model 2 has a normal useful life of several thousand tests, a spare is contained in the case ready for instant use. Changed as easily as a light bulb!

SIMPLE CIRCUIT! With but a sing filament—tried and proved in e haustive field use—foolproof in han of any workman.

SEPARATE BATTERY COMPARTMEN Batteries entirely isolated from wo ing parts of Explosimeter—no posure of working parts when ba teries are changed; no possibility electrolyte from discharged cells fecting electrical controls.

LIGHTWEIGHT AND COMPACT! Skil design has made the Model 2 E plosimeter remarkably rugged, co pact and convenient to operate. It as easy to use as it is comfortable wear. Carrying straps are eas removed when desired.

Dimensions: 3⅜" x 5⅜" x 5½"

Weighs less than 4½ lbs. without carrying straps.

New Bulletin DN-4, and Demonstratio Too!—Promptly furnished on requ

MINE SAFETY APPLIANCES CO